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Department of Employment and Training

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Employment 2000 Massachusetts Employment Projections By Industry

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February 1989

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EXECUTIVE SUMMARY
PROJECTED EMPLOYMENT CHANGES
BY INDUSTRY
1987 - 2000

Between 1987 and 2000 the Massachusetts economy is projected to create 477,240 new jobs. Over the past five years Massachusetts' economy generated one of the highest per capita incomes and lowest unemployment rates in the nation. Massachusetts' diverse industrial structure, which has been a key element in sustaining economic growth, will generate a wide variety of quality jobs. Low unemployment and economic prosperity, the two hallmarks of the Massachusetts success story, should also continue over the projection period. Not all industries and occupations, however, will share equally in the 15.6 percent expansion projected for the 13-year period.

As has been the case throughout the 1970s, over 50 percent of all the new jobs will be found in service industries. Computer and data processing services, the fastest growing industry, is projected to provide 36,400 new jobs. Strong job growth is also projected for accounting and bookkeeping, allied health, legal, management and consulting, and other business service industries. Each of these industries are projected to grow 40 percent or more, nearly three times as fast as the 15.6 percent average. Manufacturing, on the other hand, will account for a smaller share of jobs by 2000 than it does today, even with improvements in the trade and budget deficits.

Education and skill requirements will increase as the economy becomes more and more complex and dependent on human capital. Very few of the new jobs will be created for those who cannot read, write, follow directions and do mathematics.

<u>Service Industries</u> will generate 258,100 new jobs, the most of any major sector. Nearly 70 percent of these jobs will be found in the business and health service areas.

- Business services, the fastest growing segment of the economy, will generate 109,250 new jobs.
- Health services will gain 65,230 new jobs as caring for the needs of an aging population rise. Most of these new jobs will be found outside hospitals in doctors' offices, nursing homes, outpatient care centers, and home health agencies.

Construction is the fastest growing sector over the projected period. Over 43,800 new jobs will be generated.

- Public works construction jobs will boom with the expansion of the third harbor tunnel and depression of the central artery.
- Commercial and residential construction employment opportunities should also be strong as home, hospital, school, and nursing home building and modernization continue.

Finance, Insurance and Real Estate Industries are projected to grow less rapidly than in the past. Consolidations and technological advances will hold employment gains to 44,100 new jobs.

- Banking, the largest industry within the sector, will add 13,000 new jobs, growing 20.4 percent.
- The securities and commodities industry, providing more and more diversified financial services, will grow the fastest, generating 8,600 new jobs.

Wholesale and Retail Trade jobs will also expand more slowly than in the past, faced with slower labor force growth. Retail trade will add 92,900 new jobs; wholesale trade establishments, benefiting from the lower value of the dollar, will provide 42,300 new jobs.

- Eating and drinking establishments, the industry most hard hit by the teenage labor shortage, is projected to provide only 39,700 new jobs.
- Wholesaling machinery equipment and supplies such as computers, cash registers, printers, and duplicating machines will provide over 20,000 new jobs.

Manufacturing employment will decline by 26,700 jobs or 4.5 percent, with durable goods manufacturing losing 3,900 jobs and nondurable goods manufacturing, continuing their historical decline, losing 22,800 jobs. About half the net decrease will occur during 1988. For many manufacturing industries, this projected job loss reflects productivity gains achieved from automation, a slowdown in defense spending and screening out of less efficient operations. However, not all manufacturing industries will decline. High technology manufacturing industries, for example, will expand 9 percent, providing 21,470 new jobs.

- The computer manufacturing industry, the largest high technology employer with over 55,000 workers, will gain 14,100 new jobs.
- The medical instruments industry will expand 40.6 percent, the fastest growing sector of the high technology group. Developing cost-effective instruments for the large and growing health care industry will provide 4,000 new jobs.
- Printing and publishing will expand 14 percent over the period. Strong demand for business journals, directories, and software manuals should create over 7,000 new jobs.

Transportation, Communications and Utilities, the smallest employment sector, will provide 8,500 new jobs. Although the sector is largely deregulated and industry restructuring is complete, technological advancements will slow job growth.

- Transportation service industries in trucking, warehousing, and travel agencies will expand by 17 percent, providing almost 7,000 new jobs.
- Communication services industry employment will decline 8.7 percent, losing 3,000 jobs, as technology improves output and competition increases.

Government employment is projected to grow 3.5 percent. Since 1974 government has accounted for a smaller share of employment, dropping from 15.0 percent to 13.0 percent in 1987. By 2000 government's employment share will decline to 11.6 percent.

Conclusion

In the midst of economic restructuring and integration of the world economy, more people than ever before are employed in Massachusetts. For the sixth straight year Massachusetts has had the lowest unemployment rate of the 11 large states.

As in any period of dynamic growth there has always been a gap between job demands and worker skills. The Department of Employment and Training is committed to focusing its training, placement and research resources to building a qualified work force for the future.

INTRODUCTION:
HOW TO INTERPRET THE PROJECTIONS

This report examines the industrial trends which will shape employment growth in the Massachusetts economy during the coming 12 years. Based on economic models these projections for more than 100 detail-level and summary-level industries are not, and cannot be, precise forecasts. Instead, they are indicators of the relative size, general direction, and likely future impact of industries within the state economy.

Although a single growth rate estimate suggests a straight-line trend between 1987 and 2000, the figure generally incorporates the cyclical fluctuations common to most industries and sectors. At any given point in time, therefore, a projection may seem on or off target; in the longer term, however, it should reflect the dominant pattern.

Each of the projections were reviewed by a panel of state economists for reasonableness and consistency. Adjustments made to the estimates reflect the judgment of both the panel and industry specialists.

In a broader sense, the estimates also assume that certain fundamental conditions will prevail through 2000: the institutional framework of the U.S. economy; existing technological and scientific trends; current values placed on work, education, income, and leisure, and the absence of a major war or energy shortage.

The United States forecasts, upon which comparisons were drawn, are based upon the moderate growth estimates developed by the Bureau of Labor Statistics.

In the summer of 1989, the Department of Employment and Training will publish a companion report projecting occupational growth patterns in the state.

THE MASSACHUSETTS EMPLOYMENT OUTLOOK
PROJECTED CHANGES, 1987 - 2000

OVERVIEW

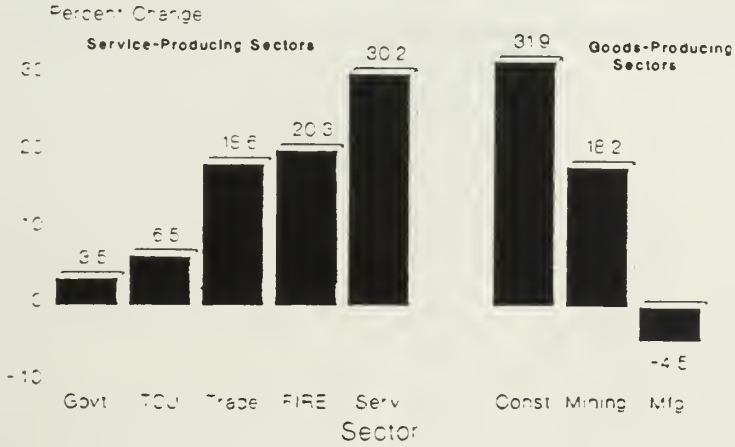
In 1987, the Massachusetts economy completed five years of expansion, the longest period of uninterrupted growth in recent times. Fueled by strong job growth in construction, services, finance and trade, the Massachusetts economy generated one of the highest per capita incomes and lowest unemployment rates in the nation. From 1982 to 1987, Massachusetts' per capita income growth averaged 8.5 percent annually, the second highest in the country. During that same period, unemployment fell well below levels customarily associated with full employment. In 1982, Massachusetts' unemployment rate stood at 7.9 percent, by 1987 it declined to 3.2 percent. Steady economic prosperity accompanied by low unemployment should continue throughout the 1987-2000 projection period.

Between 1987 and 2000, more than 470,000 new jobs will be generated in Massachusetts. This projected employment increase of 15.6 percent for the period, represents a slowing of employment growth due in large part to the slowing of labor force growth. U.S. employment during this period is projected to grow 17.4 percent.

WHERE ARE THE PROJECTED NEW JOBS?

As has been the case throughout much of the 1970s and 1980s, over 95 percent of the net new jobs will be found in the service-producing sector (i.e. services; wholesale and retail trade; finance, insurance, and real estate; transportation, communication, and utilities; and government.) Goods-producing sectors, (i.e. manufacturing; construction; and mining) will provide less than 4 out of every 100 net new jobs. Construction will add 44,000 jobs but manufacturing will lose 28,000 jobs.

Projected Rate of Job Growth
by Sector, 1987-2000



Over the past 13 years, from 1974 to 1987, the Massachusetts economy added over 690,000 jobs. Employment in the service-producing sector, especially service industries, accounted for nearly 100 percent of all job growth. Goods-producing sectors added 5,200 jobs, with construction adding 46,100 jobs and manufacturing losing 40,900 jobs.

ARE SERVICE SECTOR JOBS GOOD JOBS?

Service sector jobs are often mistakenly stereotyped as low-productivity, low-wage jobs in such industries as fast food and beauty shops. As a group, service-producing industries are too diverse to make such a generalization. Many larger service-producing industries such as health, business, education, law, engineering, finance, insurance, real estate, wholesale trade, transportation, communications, utilities, and government, for example, have high wages, extensive training requirements and advanced technology. Given the wide variety of industries within the service-producing sector it is unfair to generalize about the nature of these jobs.

THE GROWING NEED FOR EDUCATION

With the economy restructuring, occupational growth will certainly be affected, since each industry requires a different mix of occupations to produce its goods and services. As the economy becomes more and more complex and dependent on human capital, educational and skill requirements will increase.

Comparing the national employment shares of major occupational groups over the last 15 years is the most telling measure of economic change. Between 1972 and 1987, changes in technology and business practices increased skill requirements. High skilled occupations increased while low skilled jobs decreased. In 1972, for example, managerial, executive and administrative occupations were 8.9 percent of all jobs. By 1987, their share increased 2.9 percentage points to 11.8 percent of all jobs. In contrast, the share of low skilled occupations such as operators, fabricators, and laborers decreased 6 percentage points. In 1972, they were 21.2 percent of all jobs - the largest occupational share -but by 1987 these occupations were only 15.2 percent of all jobs.

United States
Percent Distribution of Employed Workers by
Major Occupational Group

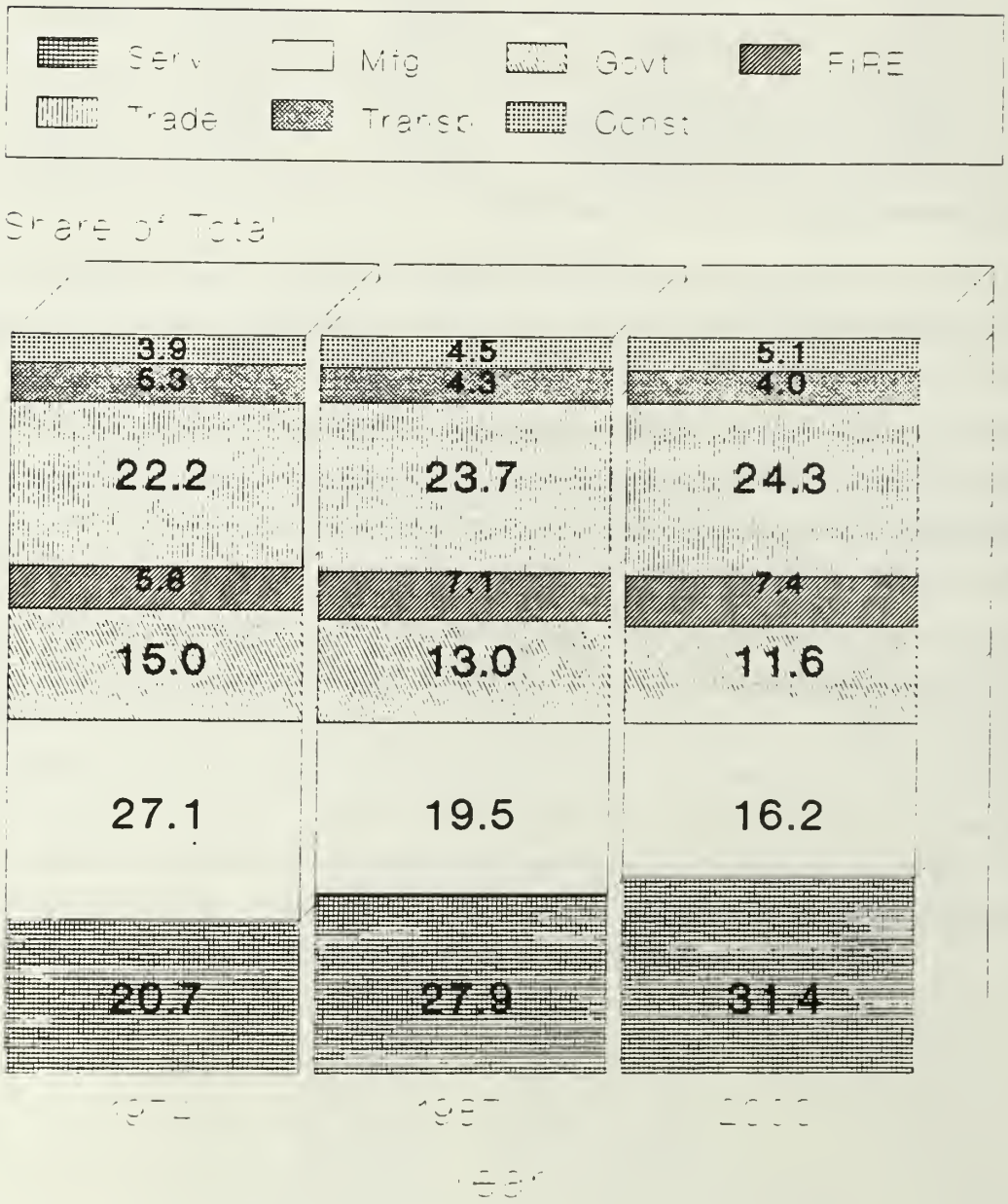
Occupational Category	% of Employed Workers 1972	1987	Percentage Point Changes 1972-1987
Total	100.0	100.0	-
Executive, Admin, Mgrs.	8.9	11.8	2.9
Professionals	10.7	13.3	2.6
Technicians	2.3	2.9	0.6
Sales	10.4	11.9	1.5
Clerical & Admin Support	16.0	16.5	0.5
Service	13.1	13.5	0.4
Precision Prod, Craft & Repair	12.6	12.0	-0.6
Operators, Fabricators & Laborers	21.2	15.2	-6.0
Farming, Forestry, & Fishing	4.7	2.9	-1.8

Source: US Bureau of Labor Statistics

Over the 1987-2000 projection period these trends will continue. High skilled jobs in managerial and professional and technical categories will expand the fastest and add the most new jobs. Low skilled jobs as helpers, laborers and assemblers will decline.

The job growth of the managerial, professional and technical occupations shows the increasing need for education. Workers with post-secondary training or a college education are best suited to take advantage of these job opportunities. While education alone will not eliminate all labor market problems, it certainly plays an important role in the emerging job market.

Massachusetts
Employment by Sector



SERVICES

The service sector will grow 30 percent, twice as fast as the 15.6 percent average for all industries, and offer the most new jobs (258,000). Many individual service industries will expand much faster than the overall sector's growth rate; and in fact, the nine fastest growing industries in the state are service industries.

Much of the growth in services is the result of an expanding economy and labor force. From 1980 to 1987, the labor force and households each grew 7 percent, much faster than population growth, and per capita income increased from $10,612 to $19,142 in current dollars. The increasing number of dual wage earners and households, for example, has increased the demand for such diverse services as financial, cleaning, repair, recreation, and cosmetology. Likewise, increased competition and changing technology gave rise to new businesses specializing in law, accounting, marketing, data processing and management consulting.

As economic and labor force growth slow, so too will service sector growth. Over the 1974-87 period, the service sector added 359,400 new jobs; its rate of growth averaged 5.7 percent a year. The projected rate of increase for 1987-2000 is 2.2 percent a year.

>>>

Sector: SERVICES

1987 Employment [actual]:	855,220	Share: 27.9
2000 Employment [projected]:	1,113,300	Share: 31.4
1987-2000 Net Change [est.]	258,080	Sector Growth: 30.2%

Industry	Current Jobs	New Jobs	Growth Rate
Business Services	191,010	109,250	57.2
Health Services	244,090	65,230	26.7
Social, Museums & Member-Ship Services	94,160	22,640	24.0
Miscellaneous Services	53,470	19,480	36.4
Legal Services	25,550	14,440	56.5
Hotels & Other Lodging Places	33,730	7,910	23.5
Personal Services	32,700	6,330	19.4
Auto & Repair Serv.	30,910	7,510	24.3
Agricultural Services	13,120	4,440	33.8
Amusement & Recreation Services	23,900	2,900	12.1
Educational Services	112,590	-2,050	-1.8

>>>

Business Services

Business services will add the most new jobs within the service sector. This industry has been rapidly expanding in recent years, doubling employment over the 1980-87 period. Computer and data processing- the fastest growing industry in the economy - is projected to add 36,400 new jobs. The demand for programming, systems analysis and systems integration will drive the projected 99 percent advance.

Similarly, demand for research and development, management and consulting, public relations, equipment rental and leasing and protective services will generate over 36,500 jobs in miscellaneous business services. Demand for personnel services, especially temporary help, will also create another 22,000 new jobs in business services. From 1980 to 1987, employment in personnel agencies soared 95 percent. Because services usually must be performed when and where the customer wants them, the trend toward flexible schedules, part-time work and shorter hours will continue.

Health Services

With the aging of the population and passage of catastrophic health insurance legislation, demand for health care is projected to be very strong. Revolutionary efforts to control hospital costs have slowed job growth in hospitals - once the largest supplier of jobs - and promoted jobs in health maintenance organizations and other treatment centers that can provide medical care less expensively. Since 1984, hospitals have added less than 1,500 new jobs while jobs in doctors' offices, ambulatory care units, and home health agencies have exploded. From 1977 to 1987, employment in doctors' and dentists' offices soared, expanding nearly 70 percent. Jobs in outpatient care clinics boomed too, growing 181 percent.

By 2000, hospitals will still remain the largest employer of health workers but will receive only 10 percent of the projected new jobs. Hospitals will grow 11 percent and provide 13,000 new jobs but nursing and personal care facilities will gain the largest number of new jobs (16,300).

Overall, jobs in health care will expand by almost 27 percent, but many individual health care occupations will grow faster than this and be among the fastest growing jobs over the decade. Job openings for nurses and therapists will be especially strong.

Miscellaneous Services

Firms in the miscellaneous services industry group provide accounting, auditing and bookkeeping services; engineering and architectural services; and educational and scientific research services. During the last seven years, from 1980 to 1987, a strong economy and building boom created over 13,000 jobs in the accounting and engineering industries.

As automation advances and economic growth slows down, jobs in engineering should increase 32 percent, providing 9,800 new jobs. Jobs in the accounting and bookkeeping industry, growing 47 percent, will generate 6,200 new jobs. Strong demand for accountants and auditors to improve businesses' finances underlie this growth.

Legal Services

Jobs in the legal profession have soared, reflecting an era of business mergers and takeovers, government regulatory activity, and divorce, custody and class action suits. Overall, the profession is projected to grow 56 percent and gain about 14,400 new jobs by 2000. Jobs for paralegals are projected to grow even more rapidly.

Educational Services

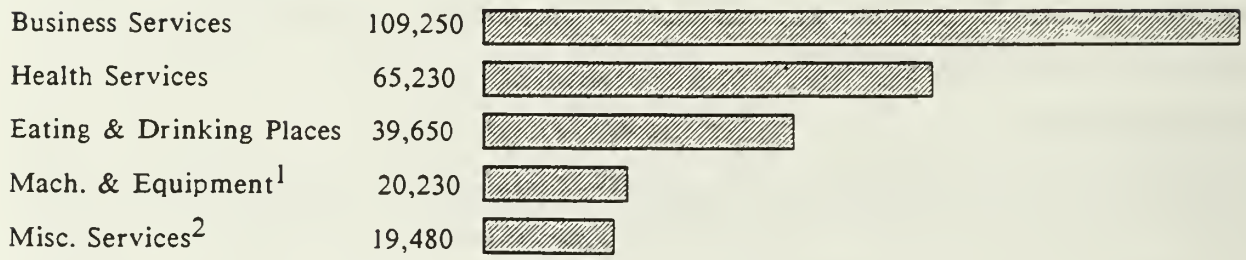
In educational services the outlook is more mixed. Employment in elementary and secondary schools is projected to grow about 8 percent, following enrollment trends. Colleges and universities, on the other hand, are expected to decline 5 percent. The expected annual declines in high school graduates should be somewhat offset by the growth of part-time older students.

FASTEST GROWING INDUSTRIES

NUMERICAL INCREASE
&
RATE OF GROWTH
1987 - 2000

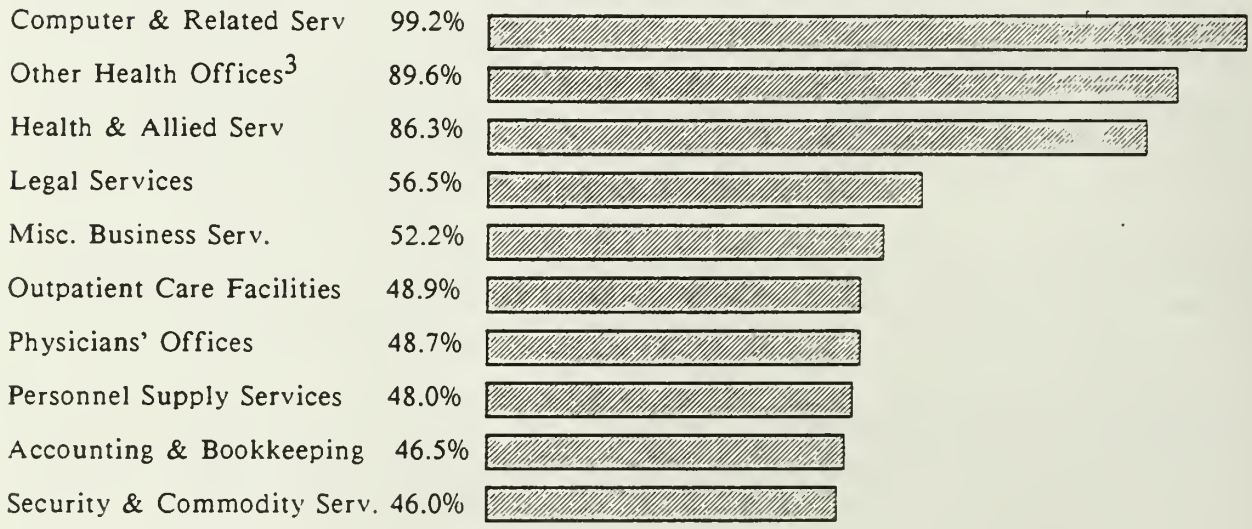
INDUSTRIES WITH THE LARGEST PROJECTED JOB GAINS

Five industries will account for more than 50 percent
of all job growth between 1987 and 2000.



FASTEST GROWING INDUSTRIES

Each of these 10 industries will grow 40 percent or more,
nearly three times as fast as the 15.6 average for all industries.



[1]This wholesale industry distributes commercial machinery, equipment and supplies such as computers, printers, cash registers and duplicating machines.

[2]This industry provides accounting, bookkeeping, engineering, architectural and noncommercial research services.

[3]This industry includes all health service offices execept for doctors' and dentists' offices. Offices of chiropractors, dieticians, optometrists, nurses and nutritionists are a few of the many health fields represented in this industry.

CONSTRUCTION

In a period of vigorous economic growth, relatively low interest rates, and dynamic household growth, all sectors of construction have been expanding steadily. From 1980 to 1987, construction employment soared, growing 76.6 percent. Over the projection period, as employment and population growth slow, construction employment is expected to grow 32 percent and create 43,800 new jobs.

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Sector: CONSTRUCTION

1987 Employment [actual]:	137,240	Share: 4.5
2000 Employment [projected]:	181,050	Share: 5.1
1987-2000 Net Change [est.]:	43,810	Sector Growth: 31.9%

>>

With the third harbor tunnel and central artery projects set to go forward, jobs in public works construction will boom. While many industry analysts estimate construction employment to peak in the early 1990s, as completion of megaprojects draws near, other sectors of construction are projected to do well after 1995.

Population characteristics are the single most important determinant of construction needs. Notwithstanding changes in interest rates, tax laws, employment, and income, specific building construction can be identified given structural changes in population movements.

With the aging of the population, for example, more health care facilities and retirement housing will be needed. Today's dominant housing model of a single family detached home will have to adapt to older households. This fundamental redesign of living space will also drive construction's employment growth over the decade.

FINANCE, INSURANCE, and REAL ESTATE

Employment in finance, insurance, and real estate is projected to grow less rapidly than in the past. Consolidations and technological advances will slow past rates of employment growth and, with deregulation eliminating many of the restrictions placed on financial services, job growth within industries could vary. Nevertheless, the sector is expected to generate 44,100 new jobs in the Massachusetts economy by 2000.

>>

Sector: FINANCE, INSURANCE and REAL ESTATE

1987 Employment [actual]:	217,820	Share: 7.1
2000 Employment [actual]:	261,990	Share: 7.4
1987-2000 Net Change [est]:	44,170	Sector Growth: 20.3%

Industry	Current Jobs	New Jobs	Growth Rate
Banking	63,710	13,020	20.4
Security & Commodity Brokers & Services	18,750	8,630	46.0
Real Estate	33,830	7,630	22.6
Other Credit Agencies	17,290	6,510	37.7
Insurance Agents, Brokers & Services	21,870	3,900	17.8
Insurance Carriers	56,080	2,910	5.2
Holding & Other Investment Offices	6,280	1,580	25.2

>>

Banks

Since the advent of regulatory reform, the banking industry's employment share has decreased while other financial services such as mutual funds and money market funds experienced an increase. Over the projection period, banking, the largest industry within the sector, will expand 20 percent, adding 13,000 new jobs. Technological changes and increased productivity will slow banking's employment growth.

Other Financial Institutions

Security and commodity brokers and services, however, will expand the fastest (46 percent) and add 8,600 new jobs. Buoyed by the strong economic recovery and lower interest rates, jobs in the security and commodity industry expanded 151 percent from 1980 to 1987. Rapid job growth in this industry will be harder to achieve over the decade. As baby boomers, however, enter their peak earning years and competition increases and tax laws change, the need for sound financial advice will continue to spur job growth. Employment opportunities in insurance companies will expand slowly, 5 percent. Facing heightened competition and shrinking markets, only 2,900 new jobs will be created over the decade.

WHOLESALE and RETAIL TRADE

Over the past 13 years, wholesale and retail trade grew 37.9 percent, from 521,500 in 1974 to 719,000 in 1987. The lifting of the blue laws, part-time work schedules, and faster than average personal income growth fueled much of this expansion. As growth in the labor force and total employment moderate, the trade industry's growth can be expected to do the same.

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Sector: WHOLESALE and RETAIL TRADE

1987 Employment [actual]:	725,560	Share: 23.7
2000 Employment [projected]:	860,770	Share: 24.3
1987-2000 Net Change [est.]:	135,210	Sector Growth: 18.6%

Industry	Current Jobs	New Jobs	Growth Rate
Wholesale Trade	171,780	42,340	24.6
Eating & Drinking Places	174,970	39,650	22.7
Misc. Retail Stores	81,920	16,960	20.7
Food Stores	94,940	11,350	12.0
Apparel & Accessory Stores	45,330	9,090	20.1
General Merchandise Stores	61,750	4,490	7.3
Bldg. Materials & Garden Supplies	21,200	4,450	21.0
Home & Furniture Stores	22,390	3,870	17.3
Car Dealerships & Service Stations	51,270	3,020	5.9

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Wholesale Trade

Benefiting from a strong economy, employment in wholesale trade rose nearly 10 percent since 1985. The wide-ranging products bought and sold by wholesalers contribute to employment stability in the sector overall as good performances of some industries offset the bad performances of others. Massachusetts wholesalers, however, have been doing better than the rest of the nation, particularly the southwest and mountain states whose economies have been depressed by the decline in oil prices. High tech and construction distributors in particular have benefited from the lower value of the dollar and strong demand for construction materials.

Since the dollar's fall, jobs in machinery equipment and supplies have expanded by 12.5 percent. Similarly, jobs in lumber, construction, hardware and plumbing have increased nearly 16 percent. bringing employment to 14,500 in 1987.

Over the decade, wholesale trade is expected to add over 42,000 new jobs, of which almost half will be found in machinery and equipment suppliers. Exports and strong spending for capital investment underlie this 45 percent advance.

Retail Trade

In retail trade, about 92,900 new jobs will be added by 2000. Though a very sizable number, this gain falls below the 136,400 retail jobs created from 1977 to 1987.

Retail trade jobs requiring little or no experience are the economy's main point of entry for first time job seekers. As Massachusetts' teenage population declines, retail trade's growth will slow. Between 1986 and 1987, Massachusetts' teenage population declined 2 percent. Over that same period retail trade employment expanded less than 1 percent.

From 1986 to 2000, Census projections indicate that the number of Massachusetts residents aged 16 to 24 will decline by 187,000. Projections for older workers aged 65 years and older show an increase of only 60,000. Unless many people in younger age groups decide to retire early and work part-time or get a second job, this gap may go unfilled.

Eating & Drinking Places

One retail industry hard hit by the teenage labor shortage has been eating and drinking places. For years these establishments showed strong and continuing growth, rising from 125,400 employees in 1977 to 177,920 in 1986. Between 1986 and 1987, however, employment declined 1.7 percent. Over the projection period, eating and drinking places will still offer the most new jobs in trade industries (39,700), but this sector's 23 percent rate of increase is much slower than it has been historically.

Other Retail Trade Establishments

With a slow growing population, job growth among other individual retail industries will slow. Food stores, growing 12 percent, will offer 11,300 new jobs. Department stores, growing 8.5 percent, will produce another 4,800 new jobs, and drug stores and other miscellaneous stores will provide another 17,000 new jobs.

MASSACHUSETTS & U.S.
HIGH TECH EMPLOYMENT PROJECTIONS
1987 AND PROJECTED 2000

INDUSTRY TITLE	MA EMP. 1986	MA EMP. 1987	MA EMP. 2000	NET CHG. 87-2000	MA% CHG. 87-2000	US% CHG. 87-2000[1]
TOTAL HIGH TECH	329,440	327,620	403,870	76,250	23.3	18.9
High Tech Service	81,810	85,780	140,560	54,780	63.9	57.8
Computer Services	34,770	36,710	73,120	36,410	99.2	88.4
Engineering & Architect	28,100	30,340	40,140	9,800	32.3	33.7
Noncommercial Research	8,360	8,560	11,430	2,870	33.5	37.8
R & D Labs	10,580	10,170	15,870	5,700	56.1	N/A
High Tech Manufacturing	247,630	241,840	263,310	21,470	8.9	3.6
Computers	58,290	55,560	69,650	14,090	25.4	20.8
Lighting & Wiring Equip.	7,170	6,670	6,230	-530	-7.8	-3.3
Communication Equip.	42,560	41,090	44,810	3,720	9.1	7.1
Elect. Components	41,420	42,030	46,260	4,230	10.1	6.2
Guided Missiles	18,170	17,940	14,180	-3,760	-21.0	-32.5
Scientific Instruments	4,950	4,980	6,030	1,050	21.1	13.1
Measuring Instruments	21,010	19,300	20,440	1,140	5.9	12.1
Optical & Opthalmic Prds.	10,070	9,790	10,480	690	7.0	6.6
Medical Instruments	9,020	9,950	13,990	4,040	40.6	24.7
Photographic Equip.	10,740	9,670	8,580	-1,090	-11.3	-10.2
Watches	500	510	360	-150	-29.4	-28.6
Drugs	2,920	3,080	3,470	390	12.7	5.8
Ordance & Accessories & Other Electrical Equip	20,810	21,270	18,830	-2,440	-11.5	-7.4

[1]Monthly Labor Review, September 1987. The US employment projections were made for the 1986-2000 period. D.E.T. updated the 1986 national base year to 1987 so that comparisons between Massachusetts and the US could be made.

MANUFACTURING

Manufacturing employment is projected to fall 4.5 percent, from 598,800 in 1987 to 572,100 by 2000, with about half the net decrease occurring during 1988. This projected employment decrease of 0.3 percent per year is modest compared to the 1.6 percent decline per year suffered from 1980 to 1987. U.S. manufacturing employment is projected to drop 5.0 percent between 1987 and 2000.

Employment projections for both durable and nondurable goods incorporate continued restructuring, but the rate of job loss is expected to slow, especially in durable goods industries. With the lower value of the dollar, jobs in durable goods production are projected to decline 1 percent while nondurable manufacturing jobs will continue their historical decline, dropping 11.4 percent.

Since 1979, manufacturing has been losing its share of total employment. Automation and the high value of the dollar contributed to manufacturing's slide. Until 1981, manufacturing was the largest sector of the Massachusetts economy. Beginning in 1982, however, the service sector replaced manufacturing as the Commonwealth's largest employer. This major structural change from a goods to a service-producing economy has been enabled by manufacturing's productivity and output growth. This shift is similar to the way agricultural employment declined as production increased with bigger tractors and better fertilizers.

From 1980 to 1987, manufacturing lost over 76,000 jobs. In one year, 1985-86, manufacturing lost approximately 35,300 jobs. While much of these jobs losses can be attributed to the high value of the dollar eroding U.S. markets, many manufacturing industries will not match their previous rates of growth or return to their 1980 employment levels. Some of the assumptions underlying these trends are:

- Higher productivity growth. Improved productivity growth is expected to expand manufacturing's output without creating corresponding job gains.
- Maturing of high tech industries. Many of the high tech industries which have consistently shown large trade surpluses are maturing as their products become more of a commodity, thereby making it difficult to expand past rates of employment growth.
- Slowdown in technological changes. Future technological changes will be evolutionary, not revolutionary. They are not assumed to have the same dramatic impact as have the introduction of computers.
- Declining real defense spending. As a percent of GNP, defense spending is projected to decline from 6.8 percent in 1986 to 4.9 percent by 2000.

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Sector: MANUFACTURING

1987 Employment [actual]:	598,820	Share: 19.5
2000 Employment [projected]:	572,130	Share: 16.2
1987-2000 Net Change [est.]:	-26,690	Sector Growth: -4.5%

Industry	Current Jobs	New Jobs	Growth Rate
Office Computing Machinery	55,560	14,090	25.4
Printing and Publishing	55,590	7,870	14.2
Scientific Instruments	54,200	5,680	10.5
Electrical & Electronic Equipment	107,470	5,620	5.2
Petroleum & Coal Products	1,470	-80	-5.4
Lumber & Wood	5,450	-400	-7.3
Furniture	8,130	-920	-11.3
Chemicals & Allied Products	17,380	-1,510	-8.7
Stone, Clay & Glass	10,650	-1,960	-18.4
Primary Metals	13,700	-2,520	-18.4
Paper & Allied Products	24,820	-3,060	-12.3
Leather & Leather Products	8,880	-3,190	-35.9
Rubber & Misc. Plastics Prod.	29,100	-3,730	-12.8
Misc. Mfg. Industries	18,900	-3,770	-19.9
Fabricated Metals	41,430	-5,110	-12.3
Food & Kindred Products	21,430	-5,950	-27.8
Textile Mill Products	17,040	-5,970	-35.0
Apparel	25,380	-7,220	-28.4
Nonelectrical Mach., nec	46,930	-7,290	-15.5
Transportation Equipment	35,340	-7,300	-20.7

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Computer Manufacturing

Massachusetts' office computing industry has been one of the fastest growing industries in manufacturing. From the mid-1970s job gains have been rapid, but since 1984 employment has fallen 18 percent. Heightened price competition, increasing product standardization and aggressive pricing have brought on these employment declines.

Mergers and consolidations have begun and are likely to continue. Output growth will slow, too, as computer equipment becomes more of a commodity. Overall, jobs in the office computing industry will grow 25 percent but not all occupations within this industry will grow at the same rate. Jobs in clerical and production categories, for example, have decreased and will continue to

decline over the decade. Professional and technical occupations, however, will increase steadily, much faster than the 25 percent industry average.

Survey results from the 1983 and 1986 occupational employment statistics survey (OES) of manufacturing industries already confirm these trends. In 1983, production occupations were 23 percent of all office computing machinery's employment; by 1986 their employment share fell to 20.7 percent. In contrast, professional and technical occupations' employment share increased from 34.8 percent in 1983 to 39.7 percent in 1986.

Office Computing Machinery

Occupational Profile

Occupational Category	Employment Share 1983	1986
Total, All Occupations	100.0	100.0
Managerial	12.5	12.9
Professional & Technical	34.8	39.3
Marketing & Sales	6.6	8.9
Clerical & Admin. Support	21.0	17.1
Production, Const., Maintenance	22.9	20.7
Service Occupations	2.2	1.2

These occupational shifts suggest that production operations are already moving offshore and that employment is becoming more and more directly related to product development. To prepare for jobs in this industry and others, getting a good education and related work experience is important.

Electric & Electronic Equipment

Overall employment in electrical and electronic equipment manufacturing is projected to increase only 5 percent as job losses in transmission and distribution equipment industrial apparatus, household appliances, lighting and wiring and radios and TVs obscure projected employment gains in communications, components, and X-ray and electromedical apparatus.

Declines in real defense spending, however, will slow job gains in communication equipment, which has traditionally had strong growth. Since 1985, the industry has already felt the slowdown in defense spending, as employment has declined by 4,100 jobs. Nevertheless, demand for high tech communications is expected to remain strong and if the Strategic Defense Initiative (SDI) continues to receive funding, employment could expand faster than the 10 percent projected growth rate.

With profits shrinking and heavy investment needed for capital equipment and research and development, employment in electronic components and accessories declined from 45,200 in 1984 to 41,400 in 1986. In 1987, employment has come back somewhat, growing 1.5 percent. Over the projection period, jobs are projected to expand by 10 percent as competition increases.

Transportation Equipment

Jobs manufacturing aircraft, cars, and missiles are expected to decline almost 21 percent. This sector has always been dominated by large successful defense contractors. With defense spending not winding down until the 1990s, employment in guided missiles has held steady. After the early 1990s, however, defense cutbacks are expected to decrease jobs in guided missiles and aircraft production about 21 percent and 15 percent respectively. Anticipated import and productivity growth should cause automobile manufacturing to decline 36 percent, losing nearly 1,500 jobs.

Scientific Instruments

The high value of the dollar and the softness of the U.S economy slowed research and development outlays for scientific instruments, causing employment to drop from 59,200 in 1984 to 54,200 in 1987. Jobs in mechanical measuring and controlling, which represents 40 percent of total employment in this category, declined almost 20 percent. The major end users of these instruments - petroleum refineries, food, pulp and paper mills - depressed sales. Over the decade, as the dollar improves and expenditures for capital and research and development improve, instrument manufacturing jobs will expand 10.5 percent.

Since Massachusetts is a leading manufacturer of medical instruments, 4,000 new jobs will be created in medical instruments and supplies. Developing cost-effective instruments for the large and growing health care industry will raise employment 41 percent. Jobs in engineering and scientific instruments will also be strong, growing 21 percent.

Printing & Publishing

Jobs in printing and publishing are projected to be the fastest growing industry group in manufacturing. Strong demand for business journals, software manuals, directories, textbooks and regional and specialty magazines caused employment to expand 21 percent from 1980 to 1987. With advertising and circulation growing at a slower pace, jobs will grow 14 percent between 1987 and 2000. Nevertheless, over 7,000 new jobs are expected to be created. Jobs in periodicals will expand the fastest (31 percent) but commercial and newspaper printing will offer the most new jobs (4,820).

Rubber & Plastic Products

Firms in the miscellaneous plastics industry manufacture plastic products not reported in other industries or not consumed within themselves. Buttons, coat hangers and thread are a few of the many products made in this industry. Small in size, averaging about 50 workers per firm, the industry as a whole is one of the largest employers within nondurable goods manufacturing. From 1979 to 1987 employment declined 6.5 percent, losing 1,550 jobs. As plastic imports grow, jobs will decline by 9 percent.

Textiles, Apparel and Leather

Jobs in textiles, apparel and leather have been declining for years. Intense foreign competition and automation contributed to over 35,000 job losses between 1980 and 1987. Over the decade, these industries will continue to rank among the industries with the largest projected job declines.

TRANSPORTATION, COMMUNICATION AND UTILITIES

Job prospects in transportation, communication and utilities are mixed. Since deregulation, employment in transportation services, the largest industry in the sector, increased 19 percent, adding 12,000 new jobs. Intense price and service competition, however, has resulted from deregulation. Over the long-term, mergers and consolidations are expected to hold job growth to 6.5 percent during the projection period.

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Sector: TRANSPORTATION, COMMUNICATION & UTILITIES

1987 Employment [actual]:	131,990	Share: 4.3
2000 Employment [projected]:	140,520	Share: 4.0
1987-2000 Net Change [est.]:	8,530	Sector Growth: 6.5%

Industry	Current Jobs	New Jobs	Growth Rate
Transportation Services	9,620	3,530	36.7
Trucking & Warehousing	30,990	3,430	11.1
Cable, Radio & TV Broadcasting	8,740	1,550	17.7
Air Transportation	11,000	1,310	11.9
Electric, Gas & Sanitary Services	21,430	1,130	5.3
Local & Interurban Transport	17,410	1,120	6.4
Water & Rail Transportation	7,640	970	12.7
Telephone Communications	25,160	-4,510	-17.9

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Transportation Services

Since deregulation, air travel has increased as lower airfares stimulated demand. Employment in travel agencies in particular boomed, doubling this industry's size. In the long run, however, job growth will slow down as competition among travel agencies increases. Overall, jobs in travel services will grow 37 percent, adding 3,500 new jobs.

Trucking & Warehousing

Demand for trucking corresponds with the overall performance of the economy. Assuming that the 15.7 percent growth for Massachusetts is reached, jobs in trucking transportation will grow by 11 percent.

Telephone Communications

Employment in the post-divestiture telecommunications industry declined as it restructured. Although industry adjustments and restructuring are now largely complete, telecommunications employment is still projected to decline 18 percent as output advances and competition increases.

Radio & TV Broadcasting & Cable Systems

With similar output gains projected for radio and TV broadcasting and cable systems, job expansions in these fields will also slow. Wiring of the Commonwealth's 351 cities and towns is nearly completed and consolidations and mergers limiting the cable industry's job growth are anticipated.

GOVERNMENT

Employment in government is projected to grow only 3.5 percent. Since 1974 government has accounted for a smaller share of employment, dropping from 15.0 percent in 1974 to 13.0 percent in 1987. Some of the declining share results from the trend to contract out operations previously performed by public employees. Many human services, for example, such as health and correctional services, are being contracted out to private firms.

Sector: GOVERNMENT

1987 Employment [actual]:	397,350	Share: 13.0
2000 Employment [projected]:	411,150	Share: 11.6
1987-2000 Net Change [est.]:	13,800	Sector Growth: 3.5%

Industry	Current Jobs	New Jobs	Growth Rate
Local Government	236,400	11,470	4.9
Educational Services	131,800	7,370	5.6
State Government	99,500	5,070	5.1
Federal Government	61,450	-2,750	-4.5
Post Offices	26,220	-2,220	-8.5

Jobs in state and local governments except for schools will grow about 5 percent. Jobs in local elementary and secondary education, however, should increase about 6 percent as enrollments grow and more emphasis is placed on education.

EMPLOYMENT PROJECTIONS
by INDUSTRY
MASSACHUSETTS VS. UNITED STATES
1987-2000

Industry	1987 Emp	2000 Emp	Net Change	MA Percent Change	US Percent Change[1]
TOTAL, ALL INDUSTRIES	3,065,800	3,543,040	477,240	15.6%	17.4%
Services	855,220	1,113,300	258,080	30.2	39.5
Business Services	191,010	300,260	109,250	57.2	59.4
Health Services	244,090	309,320	65,230	26.7	57.6
Legal Services	25,550	39,990	14,440	56.5	60.0
Education	112,590	110,540	-2,050	-1.8	13.6
Finance, Insurance, Real Estate	217,820	261,990	44,170	20.3	20.2
Banking	63,710	76,730	13,020	20.4	15.1
Insurance	77,950	84,770	6,820	8.8	13.9
Wholesale & Retail Trade	725,560	860,770	135,210	18.6	24.6
Wholesale Trade	171,780	214,120	42,340	24.6	25.3
Retail Trade	553,780	646,640	92,860	16.8	24.3
Transportation Comm. Utilities	131,990	140,520	8,530	6.5	6.3
Transportation	76,660	87,020	10,360	13.5	11.2
Communications	33,900	30,940	-2,960	-8.7	-5.8
Utilities	21,430	22,560	1,130	5.3	7.2
Government	397,350	411,150	13,800	3.5	7.4
Federal	61,450	58,700	-2,750	-4.5	1.9
State & Local	335,900	352,450	16,550	4.9	8.6
Manufacturing	598,820	572,130	-26,690	-4.5	-5.0
Durable Goods	397,740	393,880	-3,860	-1.0	-4.5
Lumber & Wood	5,450	5,050	-400	-7.3	-6.1
Furniture & Fixtures	8,130	7,210	-920	-11.3	9.6
Stone, Clay, Glass	10,650	8,690	-1,960	-18.4	-8.5
Primary Metals	13,700	11,180	-2,520	-18.4	-23.4
Fabricated Metals	41,430	36,320	-5,110	-12.3	-8.1

[1]Monthly Labor Review, September 1987. The U.S employment projections were made for the 1986-2000 period. D.E.T. updated the 1986 national base year to 1987 so that comparisons between Massachusetts and the US could be made.

EMPLOYMENT PROJECTIONS

by INDUSTRY

MASSACHUSETTS VS. UNITED STATES

1987-2000

Industry	1987 Emp	2000 Emp	Net Change	MA Percent Change	US Percent Change[1]
Machinery, Nonelectrical	102,490	109,290	6,800	6.6	4.4
Electrical Machinery	107,470	113,090	5,620	5.2	1.3
Transportation Equip	35,340	28,040	-7,300	-20.7	-15.8
Instruments	54,200	59,880	5,680	10.5	10.8
Misc. Mfg.	18,900	15,130	-3,770	-19.9	-10.9
Nondurable Goods	201,080	178,240	-22,840	-11.4	-5.6
Food & Kindred Prod.	21,430	15,480	-5,950	-27.8	-11.0
Textiles	17,040	11,070	-5,970	-35.0	-16.7
Apparel	25,380	18,160	-7,220	-28.4	-17.0
Paper	24,820	21,760	-3,060	-12.3	-3.4
Printing & Publishing	55,590	63,460	7,870	14.2	13.6
Chemicals	17,380	15,870	-1,510	-8.7	-7.3
Petro. & Coal	1,470	1,390	-80	-5.4	-23.5
Rubber & Plastics	29,100	25,370	-3,730	-12.8	5.2
Leather	8,880	5,690	-3,190	-35.9	-35.9
Construction	137,240	181,050	43,810	31.9	15.2
Mining	1,810	2,140	330	18.2	-2.2

[1]Monthly Labor Review, September 1987. The U.S employment projections were made for the 1986-2000 period. D.E.T. updated the 1986 national base year to 1987 so that comparisons between Massachusetts and the US could be made.

MASSACHUSETTS

1987 - 2000 EMPLOYMENT PROJECTIONS

BY INDUSTRY

Industry Title	1987 Employment[1]	2000 Employment[1]	Net Change 1987-2000	Percent Change 1987-2000
Total, All Industries	3,065,800	3,543,040	477,240	15.6%
Services	855,220	1,113,300	258,080	30.2
Hotels & Other Lodging Places	33,730	41,640	7,910	23.5
Personal Services	32,700	39,030	6,330	19.4
Laundry & Garment Services	11,880	12,830	950	8.0
Beauty & Barber Shops	11,840	14,710	2,870	24.2
All other Personal Serv.	8,990	11,500	2,510	27.9
Business Services	191,010	300,260	109,250	57.2
Advertising	4,890	6,590	1,700	34.8
Credit Agencies	2,010	2,280	270	13.4
Mailing, Reprod, Comm. Art	6,760	8,920	2,160	32.0
Serv. to Dwellings & Bldgs.	24,700	34,860	10,160	41.1
Personnel Supply Services	45,940	67,970	22,030	48.0
Computer & Data Processing	36,710	73,120	36,410	99.2
Misc. Business Services	70,000	106,520	36,520	52.2
Auto Repair Services	22,490	28,780	6,290	28.0
Misc. Repair Services	8,420	9,640	1,220	14.5
Motion Pictures	4,800	4,370	-430	-9.0
Amusement & Recreational Serv.	19,100	22,430	3,330	17.4
Health Services	244,090	309,320	65,230	26.7
Physicians' Offices	24,890	37,020	12,130	48.7
Dentists' Offices	13,740	17,240	3,500	25.5
Other Health Offices	4,440	8,420	3,980	89.6
Nursing & Personal Care	49,730	66,030	16,300	32.8
Hospitals	123,790	136,750	12,960	10.5
Medical & Dental Labs	4,220	5,270	1,050	24.9
Oupatient Care Facilities	12,790	19,050	6,260	48.9
Health & Allied Services, nec*	10,490	19,540	9,050	86.3
Legal Services	25,550	39,990	14,440	56.5
Educational Services	112,590	110,540	-2,050	-1.8
Elementary & Secondary Ed.	20,180	21,810	1,630	8.1
Colleges & Universities	85,700	81,170	-4,530	-5.3
All other Education	6,700	7,570	870	13.0
Social Services	57,990	78,090	20,100	34.7
Museums & Gardens	3,970	5,150	1,180	29.7
Membership Organizations	32,200	33,560	1,360	4.2
Miscellaneous Services	53,470	72,950	19,480	36.4
Eng. & Architectural Services	30,340	40,140	9,800	32.3
Accounting & Bookkeeping	13,370	19,590	6,220	46.5
Noncomm'l Research & Related	9,760	13,230	3,470	35.6
Agricultural Services	13,120	17,560	4,440	33.8

[1]Summed parts may not equal total because of rounding.

Percentages calculated from rounded numbers.

MASSACHUSETTS

1987 - 2000 EMPLOYMENT PROJECTIONS

BY INDUSTRY

Industry Title	1987 Employment[1]	2000 Employment[1]	Net Change 1987-2000	Percent Change 1987-2000
Finance, Insurance & Real Estate	217,820	261,990	44,170	20.3
Banking	63,710	76,730	13,020	20.4
Credit Reporting Agencies	17,290	23,800	6,510	37.7
Sec. & Comm. Brokers & Serv.	18,750	27,380	8,630	46.0
Insurance Carriers	56,080	58,990	2,910	5.2
Insurance Agents & Brokers	21,870	25,770	3,900	17.8
Real Estate	33,830	41,460	7,630	22.6
Holding & Investment Offices	6,280	7,860	1,580	25.2
Wholesale & Retail Trade	725,560	860,770	135,210	18.6
Wholesale Trade, Total	171,780	214,120	42,340	24.6
Machinery, Equip. & Supplies	45,280	65,510	20,230	44.7
Groceries & Related Supplies	24,530	27,120	2,590	10.6
Retail Trade, Total	553,780	646,640	92,860	16.8
Bldg. & Garden Materials	21,200	25,650	4,450	21.0
General Merchandise Stores	61,750	66,240	4,490	7.3
Department Stores	55,640	60,380	4,740	8.5
All other Gen. Mdse. Stores	6,120	5,860	-260	-4.2
Food Stores	94,940	106,290	11,350	12.0
Grocery Stores	77,520	86,570	9,050	11.7
All other Food Stores	17,430	19,720	2,290	13.1
Car Dealerships & Serv. Stations	51,270	54,290	3,020	5.9
Apparel & Accessory Stores	45,330	54,420	9,090	20.1
Home & Furniture Stores	22,390	26,260	3,870	17.3
Eating & Drinking Places	174,970	214,620	39,650	22.7
Misc. Retail Stores	81,920	98,880	16,960	20.7
Drug Stores	18,690	21,230	2,540	13.6
Misc. Shopping Goods Stores	27,720	37,450	9,730	35.1
Other Misc. Stores	35,510	40,210	4,700	13.2
Tranportation & Utilities	131,990	140,520	8,530	6.5
Railroads	4,000	4,600	600	15.0
Local & Suburban Transportation	17,410	18,530	1,120	6.4
Trucking & Warehousing	30,990	34,420	3,430	11.1
Water Transportation	3,640	4,010	370	10.2
Air Transportation	11,000	12,310	1,310	11.9

[1]Summed parts may not equal total because of rounding.

Percentages calculated from rounded numbers.

MASSACHUSETTS

1987 - 2000 EMPLOYMENT PROJECTIONS

BY INDUSTRY

Industry Title	1987 Employment[1]	2000 Employment[1]	Net Change 1987-2000	Percent Change 1987-2000
Transportation Services	9,620	13,150	3,530	36.7
Communication Services	33,900	30,940	-2,960	-8.7
Telephone Communications	25,160	20,650	-4,510	-17.9
Other Communications	8,740	10,290	1,550	17.7
Electric, Gas & Sanitary Serv.	21,430	22,560	1,130	5.3
Government	397,350	411,150	13,800	3.5
Federal Government, Total	61,450	58,700	-2,750	-4.5
Post Offices	26,220	24,000	-2,220	-8.5
All other Federal Govt.	35,220	34,700	-520	-1.5
State & Local Government, Total	335,900	352,450	16,550	4.9
State & Local Education	158,600	166,440	7,840	4.9
All other State & Local Govt.	177,300	186,010	8,710	4.9
State Government	99,500	104,570	5,070	5.1
Educational Services	26,800	27,270	470	1.8
All other State Government	72,700	77,300	4,600	6.3
Local Government	236,400	247,870	11,470	4.9
Educational Services	131,800	139,170	7,370	5.6
All other Local Government	104,600	108,700	4,100	3.9
Manufacturing	598,820	572,130	-26,690	-4.5
Durable Gds. Mfg. Total	397,740	393,880	-3,860	-1.0
Lumber & Wood	5,450	5,050	-400	-7.3
Furniture	8,130	7,210	-920	-11.3
Stone, Clay & Glass	10,650	8,690	-1,960	-18.4
Primary Metals	13,700	11,180	-2,520	-18.4
Fabricated Metals	41,430	36,320	-5,110	-12.3
Nonelectrical Machinery	102,490	109,290	6,800	6.6
Metalworking Machinery	12,830	10,530	-2,300	-17.9
Special Industry Machinery	11,680	9,240	-2,440	-20.9
General Industry Machinery	7,880	6,630	-1,250	-15.9
Office Computing Machinery	55,560	69,650	14,090	25.4
Other Nonelectrical Machinery	14,540	13,240	-1,300	-8.9
Electrical & Electronic Equipment	107,470	113,090	5,620	5.2
Lighting & Wiring Equipment	6,760	6,230	-530	-7.8
Communications Equipment	41,090	44,810	3,720	9.1
Electronic Components	42,030	46,260	4,230	10.1
All other Elect Machinery	17,580	15,790	-1,790	-10.2

[1]Summed parts may not equal total because of rounding.

Percentages calculated from rounded numbers.

MASSACHUSETTS

1987 - 2000 EMPLOYMENT PROJECTIONS

BY INDUSTRY

Industry Title	1987 Employment[1]	2000 Employment[1]	Net Change 1987-2000	Percent Change 1987-2000
Transportation Equipment	35,340	28,040	-7,300	-20.7
Motor Vehicles & Parts	4,040	2,580	-1,460	-36.1
Aircraft and Parts	11,320	9,560	-1,760	-15.5
Guided Missiles	17,940	14,180	-3,760	-21.0
Other Transport Machinery	2,040	1,720	-320	-15.7
Scientific Instruments	54,200	59,880	5,680	10.5
Scientific Instruments	4,980	6,030	1,050	21.1
Measuring & Controlling	19,300	20,440	1,140	5.9
Optical Instruments	7,110	8,400	1,290	18.1
Medical Instruments	9,950	13,990	4,040	40.6
Ophthalmic Goods	2,680	2,080	-600	-22.4
Watches & Photographic Equip.	10,180	8,940	-1,240	-12.2
Misc. Mfg. Industries	18,900	15,130	-3,770	-19.9
Jewelry & Silverware	7,300	6,130	-1,170	-16.0
Toys & Sporting Goods	5,880	4,730	-1,150	-19.6
All other Misc. Industries	5,720	4,270	-1,450	-25.3
Nondurable Gds. Mfg., Total	201,080	178,240	-22,840	-11.4
Food & Kindred Products	21,430	15,480	-5,950	-27.8
Textile Mill Products	17,040	11,070	-5,970	-35.0
Apparel	25,380	18,160	-7,220	-28.4
Paper & Allied Products	24,820	21,760	-3,060	-12.3
Misc. Converted Products	12,300	11,700	-600	-4.9
Containers & Boxes	6,350	4,660	-1,690	-26.6
All other Paper Mfg.	6,160	5,390	-770	-12.5
Printing & Publishing	55,590	63,460	7,870	14.2
Newspapers	16,700	18,740	2,040	12.2
Periodicals	4,340	5,690	1,350	31.1
Books	6,430	7,050	620	9.6
Commercial Printing	17,760	20,550	2,790	15.7
All other Printing	10,360	11,430	1,070	10.3
Chemicals & Allied Products	17,380	15,870	-1,510	-8.7
Drugs	3,080	3,470	390	12.7
All other Chemicals	14,300	12,390	-1,910	-13.4
Petroleum & Coal Products	1,470	1,390	-80	-5.4
Rubber & Misc. Plastics	29,100	25,370	-3,730	-12.8
Misc. Plastics Products	22,240	20,250	-1,990	-8.9
All other Rubber & Plastics	6,870	5,120	-1,750	-25.5
Leather & Leather Products	8,880	5,690	-3,190	-35.9
Construction	137,240	181,050	43,810	31.9
Mining	1,810	2,140	330	18.2

Summed parts may not equal total because of rounding.

Percentages calculated from rounded numbers.

THE STANDARD INDUSTRIAL CLASSIFICATION SYSTEM

The industries covered in these projections are defined by the Standard Industrial Classification (SIC) system. This coding system divides the economic activities of all firms into broad economic sectors, i.e., goods and services. These broad sectors are then broken down into divisions, major groups and specific industry groups.

A detailed description of SIC definitions is contained in the 1972 Standard Industrial Classification Manual.

THE DATA & NONECONOMIC CODE CHANGES

Industry employment data collected by the ES-202 Program is subjected to year-to-year fluctuations caused by noneconomic code changes, i.e. reclassification changes. In general, these changes are made not because an establishment has actually changed its product or service, but rather because more complete information on a company's activity has become available.

The historical employment data used in the projections was adjusted to reflect these noneconomic code changes. While this data will differ from originally published data, the adjustment is necessary to prevent a distortion in the historical time series. Future noneconomic code changes and SIC revisions, however, could potentially distort the 2000 projections for certain industries.